Supplementary Table 2: Investigations and treatment of vitamin D deficiency[2,3,5,24,25]

<table>
<tr><th colspan="3">Vitamin D deficiency in congenital ichthyosis</th></tr>
<tr><td colspan="3">- Vitamin D, a fat-soluble vitamin, has its first prohormone being synthesised in skin after exposure to ultraviolet B (UVB) light.
- Initial correction and maintenance of vitamin D and calcium does not require urinary calcium:creatinine ratio. In addition to improvement in bone health, this takes around 4–10 weeks depending on the severity; improvement in cutaneous disease is also documented, around ten days as noticed by Sethuraman G et al.
- In a recent study conducted by Mahajan et al., although there was a statistically significant difference in mean vitamin D levels between the ichthyosis phenotypes, there was no correlation between the serum vitamin D levels and ichthyosis severity scores, thus emphasising the necessity of screening for Vitamin D deficiency in all congenital ichthyosis patients, including those with milder phenotypes.</td></tr>
<tr><th colspan="3">Investigations</th></tr>
<tr><td>Hormonal</td><td colspan="2">- Serum 25-hydroxyvitamin D (25OH-D)
- Serum parathyroid hormone (PTH)</td></tr>
<tr><td>Biochemical</td><td colspan="2">- Alkaline phosphatase (ALP)
- Serum calcium (Ca^{2+})
- Serum phosphate
- Urinary calcium-creatinine ratio</td></tr>
<tr><td>Radiological</td><td colspan="2">- X-ray distal wrist and knees (sites of rapid bone growth)
- Other sites (costochondral junction, skull)
- Dual energy X-ray absorptiometry scan (DEXA scan)</td></tr>
<tr><th colspan="3">Treatment</th></tr>
<tr><td></td><td>Vitamin D <20 ng/mL
WITH clinical rickets</td><td>Vitamin D <20 ng/mL
WITHOUT clinical rickets</td></tr>
<tr><td>Intensive phase</td><td>Cholecalciferol 60,000 IU weekly for 10 weeks +
elemental Ca^{2+} 50–75 mg/kg/day
Review in 12 weeks with repeat X-rays and labs
- Healed → maintenance phase
- Not healed → continue till radiological healing seen</td><td>Cholecalciferol 60,000 IU weekly for four weeks +
elemental Ca^{2+} 50–75 mg/kg/day</td></tr>
<tr><td>Maintenance phase</td><td>Cholecalciferol 400 IU (infants) – 600 IU (children >1 year) daily +
elemental Ca^{2+} 50–75 mg/kg/day to be given lifelong
Review in three months with 25-OH-D and PTH</td><td>Cholecalciferol 400 IU (infants) – 600 IU (children >1 year) daily OR Cholecalciferol 60,000 IU monthly +
elemental Ca^{2+} 50–75 mg/kg/day to be given lifelong</td></tr>
<tr><td>Follow- up</td><td>Yearly bone and lab parameters</td><td>Yearly lab parameters</td></tr>
<tr><th colspan="3">Stoss therapy for vitamin D deficient rickets</th></tr>
<tr><td colspan="3">- Particularly helpful for patients with poor compliance to therapy
- Oral administration of 100,000–600,000 IU vitamin D daily (over a period of 1–5 days) followed by eight weeks of 400–-1000 IU Vitamin D daily OR 50,000 IU Vitamin D weekly</td></tr>
</table>

UVB, Ultraviolet B; 25OH-D, 25-hydroxycholecalciferol; PTH, Parathyroid hormone; ALP, Alkaline Phosphatase; $Ca2^{+}$, Calcium; DEXA, Dual energy X-ray absorptiometry; IU, International units.

SUPPLEMENTARY FILES: Additional references

24. Gupta P, Dabas A, Seth A, Bhatia VL, Khadgawat R, Kumar P, et al. Indian Academy of Pediatrics Revised (2021) Guidelines on Prevention and Treatment of Vitamin D Deficiency and Rickets. Indian Pediatr 2022;59(2):142-58.

25. Mahajan R, Bakshi S, Chatterjee D, De D, Saikia UN, Handa S. Clinico-epidemiologic profile of non-syndromic congenital ichthyosis - a retrospective chart review of 107 Patients. Indian J Dermatol 2024;69:113-8.